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ABSTRACT

This investigator bases his study on the principle that competency-based teacher training programs require clear statements of objectives, sequenced according to the needs and interests of learners and according to instructional considerations. A classification system used to generate teaching competencies for teachers of varying levels of skill and experience is discussed. The results of a study in which pre- and in-service teachers, principals, superintendents, and teacher trainers classified a set of competencies according to the time they should be learned in a teacher's career are reported. The study was designed to test the usefulness of the classification system and the competencies identified through its use. Two tables of data are presented. (Author)

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Identifying and Classifying Competencies for Performance-Based Teacher Training

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Growing concern with the quality of instruction in the United States has led to suggestions that teacher training and certification be based upon clearly defined performance criteria. Several states have modified their certification procedures in accord with this suggestion and more are likely to do so. Teacher educators have not been unaware of this, and, consequently, increasing numbers are moving to establish performance-based programs of teacher training.

Despite the activity in the field and the willingness of educators to join the performance-based teacher education movement, no satisfactory description of the components of a performance-based system of teacher training currently exists. Aside from being able to describe general system characteristics (e.g., pre-specified operational objectives, objective-based instruction and evaluation), little attention has been given to identifying and sequencing the competencies that must be developed.

This study was conducted as part of an effort to develop a competency-based program of pre- and inservice teacher education. The purpose of the study was to generate a list of competencies

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Paper presented at the American Educational Research Association Annual Meeting in New Orleans, February, 1973. Dr. Brown is associate director of the Laboratory for Educational Development and Dr. Okey is an associate of the National Center for the Development of Training Materials in Teacher Education, Indiana University, Bloomington.

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appropriate for a competency-based training program and to assign each competency to one of three levels of training.

PROCEDURE

A classification system was generated that analyzed the teaching act into six functions. The functions for the system are based on the work of Frieder* and are represented by the acronym ODPrIME: O = Objectives formulation, D = Diagnosis of needs, Pr = Prescription of Instruction, I = Instruction, M = Motivation, and E = Evaluation. Groups of objectives (called "competency clusters") were developed for each of the six teaching functions identified by the ODPrIME model. This was done by using a task analytic method and consisted of asking what the teacher had to do in order to perform each of the functions identified.

To date, thirty-seven competency clusters have been identified; it is expected that others will be added as our work proceeds. These clusters are shown in Figure 1. The rows in the figure represent teaching functions. Each row contains competencies hypothesized as being necessary for performing the teaching function assigned to that row.**

Because teachers do not require training in all teaching competencies prior to entry into the classroom, the clusters have

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*Frieder, B. Motivator: Least developed of teacher roles. Educational Technology, February 1970, 10, 28-36.

**For a listing of the performance statements associated with each competency cluster see a paper by Okey, J. and Brown, J. entitled, "Competencies for performance-based teacher training." This paper will be published later by the National Center for the Development of Training Materials in Teacher Education, Indiana University, Bloomington, Indiana.

Skill Levels / Teaching Functions	LEVEL 1 Beginning Teacher	LEVEL 2 Experienced Teacher	LEVEL 3 Master Teacher
SPECIFY OBJECTIVES	1.10 Writing Objectives I** 1.11 Selecting Objectives 1.12 Cognitive, Affective and Psychomotor Objectives	1.20 Writing Objectives II 1.21 Bloom's Taxonomy 1.22 Affective and Psychomotor Taxonomies	1.30 Sequencing Objectives
DIAGNOSE LEARNERS	2.10 Constructing Evaluation Measures 2.11 Administering and Scoring Diagnostic Tests 2.12 Sight, Hearing, Speech, and Psychological Testing for Teachers	2.20 Measuring Reading Ability and Reading Level 2.21 Using and Interpreting Standardized Test Scores	2.30 Identifying Physiological and Psychological Disorders
PRESCRIBE INSTRUCTION	3.10 Selecting Materials and Resources of Instruction 3.11 Prescribing Instruction for Individuals	3.20 Organizing Peer Tutoring 3.21 Using Para-professionals in the Classroom	3.30 Training Para-professionals 3.31 Matching Students With Instruction 3.32 Developing Instructional Segments
INSTRUCT LEARNERS	4.10 Tutoring 4.11 Procedures for Individualizing Instruction 4.12 Question Asking 4.13 Leading a Discussion 4.14 Effective Lecturing 4.15 Teaching for Mastery	4.20 Probing Techniques	4.30 Organizing a Teaching Team
MOTIVATE LEARNERS	5.10 Student Record Keeping 5.11 Using Contingency Management in the Classroom	5.20 Gaining Student Attention	5.30 Organizing Contingency Management Programs 5.31 Conferencing and Counseling With Students and Parents
EVALUATE INSTRUCTION	6.10 Marks and Grades 6.11 Reporting Progress to Students and Parents 6.12 Teacher and Program Evaluation		6.30 The Teacher As Experimenter 6.31 Evaluating Affective Behavior 6.32 Analyzing Verbal Interaction

*Based on a model by Frieder (Educational Technology, February, 1970)
**Each title in the chart denotes a module of instruction of varying length.

FIGURE 1. AN ORGANIZATION FOR TEACHING FUNCTIONS, SKILL LEVELS, AND TRAINING MODULES.

been tentatively grouped into three experience levels (the three columns in Figure 1).

Level 1: Competencies to be obtained before entry into the classroom. These would include basic classroom survival skills.

Level 2: Competencies that could be obtained after entry into the classroom and most likely to be found in experienced teachers.

Level 3: Competencies that would be expected of master teachers but which ordinarily would not be required of beginning or experienced teachers.

Since nonempirical methods were used to identify and associate the competency clusters with function and experience levels in the classification system, preservice teachers, employed teachers, principals/supervisors, and teacher educators were asked to examine the competencies which had been identified and to determine at what point in a teacher's career, if any, the competencies should be acquired.

The manner in which this was done is as follows. Each competency cluster was printed on a 4 x 6 inch card. With the name of each cluster appeared a brief description of the purpose of the cluster and a list of skills associated with that cluster. In all, there were 37 cards representing the 37 clusters or sets of competencies which had been identified. The four groups of respondents were asked to read the cards and to sort them into three piles--those describing skills beginning teachers should have (Level 1 above); those experienced teachers should have (Level 2); and those master teachers should have (Level 3).

RESULTS

Figure 2 shows the percentage of persons from each of the four responding groups that assigned competency clusters to the three experience levels. From the composite of all responses (the last column in Figure 2), clusters can be identified about which there is high agreement. Any cluster that at least 70% of the respondents assigned to the same experience level is listed in Figure 3.

1.10 Writing Objectives I	4.14 Effective Lecturing
1.12 Cognitive, Affective, and Psychomotor Objectives	4.30 Organizing a Teaching Team
1.20 Writing Objectives II	5.10 Student Record Keeping
2.10 Constructing Evaluation Measures	5.20 Gaining Student Attention
2.30 Identifying Physiological and Psychological Disorders	5.30 Organizing Contingency Management Programs
3.30 Training Paraprofessionals	6.10 Marks and Grades
4.12 Question Asking	6.30 The Teacher as Experimenter

Figure 3. Clusters assigned to same experience level by 70% or more of the respondents.

Examination of the "last" column in Figure 2 also reveals several competency clusters on which there is little agreement. Clusters that fewer than 50% of respondents assigned to the same experience level are listed in Figure 4.

Cluster	Preservice Teachers n=26			Teachers n=60			Teacher Educators n=23			Principals/ Supervisors n=16			All Groups n=125		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1.10	96	4	0	83	14	3	80	12	8	75	25	0	84	13	3
1.11	77	19	4	62	32	6	65	22	13	56	38	6	65	28	7
1.12	92	8	0	80	17	3	78	17	5	72	21	7	81	16	3
1.20	89	11	0	71	22	7	65	35	0	63	31	6	73	23	4
1.21	89	11	0	51	25	24	57	43	0	24	38	38	57	27	16
1.22	88	12	0	53	35	12	67	29	4	24	59	17	58	32	10
1.30	89	8	3	40	48	12	39	44	17	44	38	18	50	38	12
2.10	89	8	3	74	20	6	70	30	0	50	44	6	73	22	5
2.11	52	28	20	49	37	14	52	44	4	31	50	19	48	38	14
2.12	27	65	8	36	47	17	52	44	4	38	38	24	37	49	14
2.20	62	34	4	62	35	3	57	39	4	74	13	13	62	33	5
2.21	27	58	15	37	45	18	35	57	8	19	50	31	32	50	18
2.30	4	19	77	2	7	91	9	4	87	12	19	69	5	10	85
3.10	68	24	8	55	38	7	65	31	4	56	38	6	60	34	6
3.11	44	52	4	55	40	5	42	50	8	56	38	6	51	43	6
3.21	8	44	48	15	58	27	0	65	35	6	75	19	10	59	31
3.30	0	15	85	0	17	83	0	13	87	0	19	81	0	16	84
3.31	35	65	0	29	64	7	30	65	5	50	50	0	33	63	4
3.32	40	40	20	40	47	13	30	48	22	44	38	18	39	44	17
4.10	50	46	4	61	34	5	42	58	0	75	25	0	57	40	3
4.11	54	46	0	36	47	17	26	57	17	47	53	0	39	50	11
4.12	100	0	00	80	19	1	95	5	0	94	0	6	89	10	1
4.13	81	19	0	60	27	13	65	31	4	50	31	19	64	26	10
4.14	74	22	4	69	20	11	78	17	5	56	31	13	70	22	8
4.20	85	12	3	57	38	5	70	30	0	75	25	0	67	30	3
4.30	4	31	65	2	23	75	4	4	92	6	31	63	3	22	75
5.10	54	31	15	76	15	9	70	26	4	73	27	0	70	21	9
5.11	58	38	4	46	49	5	42	42	16	33	60	7	46	47	7
5.20	83	17	0	80	18	2	96	4	0	67	27	6	82	16	2
5.30	4	31	65	2	16	82	4	18	78	6	19	75	3	20	77
5.31	27	46	27	46	36	18	39	48	13	53	40	7	41	41	18
6.10	64	23	8	73	20	7	74	26	0	81	13	6	73	22	5
6.11	38	42	20	56	34	10	68	32	0	75	25	0	57	34	9
6.12	46	19	35	31	29	40	5	50	45	18	47	35	27	33	40
6.30	4	20	76	8	24	68	4	17	79	6	6	88	6	19	75
6.31	54	35	11	47	45	8	39	61	0	38	38	24	46	46	8
6.32	39	27	34	32	43	25	42	25	33	19	31	50	33	35	32

Figure 2. Assignment (%) of competency clusters to experience levels.

2.11	Administering and Scoring Diagnostic Tests	5.31	Conferencing and Counseling with Students and Parents
2.12	Sight, Hearing, Speech, and Psychological Testing	6.12	Teacher and Program Evaluation
3.32	Developing Instructional Segments	6.31	Evaluating Affective Behavior
5.11	Using Contingency Management in the Classroom	6.32	Analyzing Verbal Interaction

Figure 4. Clusters that less than 50% of the respondents assigned to same experience level.

It is interesting to compare the rankings of the clusters by the four responding groups. Employed teachers and teacher educators appear to be in substantial agreement about when various clusters should be learned. The widest differences of opinion are between preservice teachers and principals/supervisors. For example, 89% of preservice teachers rated cluster 1.21 (Bloom's Taxonomy), as a task for beginning teachers while only 24% of principals/supervisors did so.

Data from Figure 2 also reveal a number of disagreements with the assignment of clusters as shown in Figure 1. These assignments were completed prior to collecting the data reported in this paper. Taking the highest per cent figure from the "All Groups" column in Figure 2 as a basis for assignment would cause us to shift 15 of the competency clusters from one level to another. Nine of these competency clusters would be moved to Level 1 (i.e., to be learned by teachers in training).

DISCUSSION

Although educators may wish that they could teach teachers everything they need to know about teaching prior to their entry into the classroom, such a goal is obviously impossible. Consequently, they are forced to restrict their efforts to a more limited range of tasks. Preservice education is a collective attempt to provide prospective teachers with mastery of tasks which are considered vital to their success in the classroom. Typically it also attempts to provide the teacher with a broad understanding of the field as a profession and of its place within the social context. In-service education is given responsibility for developing skills and perspectives which can help a teacher better perform his teaching functions and better understand the relationship of school to society. Implicit in this structure of teacher training are assumptions about what knowledge and skills are important for a teacher at various stages in his or her career.

The grid that we have discussed (Figure 1) permits these assumptions to be made explicit. This, in turn, facilitates both empirical, research-based validation and consensual validation of the assignment of competencies to the teaching act. As we have used it in this study, the grid provides a means for surfacing disagreements between groups or individuals regarding performance competencies that teachers require at varying stages in their careers. Such information can be extremely valuable to an educational administrator attempting to establish performance-based teaching criteria within a school system. It allows the administrator

to focus his attention, as well as that of contending groups, on areas of agreement and disagreement. This should reduce the amount of time required to establish criteria acceptable to the community since public and private procedings can be devoted to resolving differences that are clearly defined. In addition to helping the administrator, the grid and sorting technique have implications and potential utility for the curriculum developer, teacher educator, and educational researcher. Among the uses we have identified are the following:

1. For the curriculum developer, the grid and assessment procedure provide a means of selecting and organizing a development program that addresses the felt-needs of a particular group of people. It allows the developer to work on a priority basis on a small number of units without losing sight of the needs of his market or of the place of the units within an overall instructional system.

2. For the teacher educator, the grid permits an explicit definition of tasks that a teacher is expected to master at certain stages in his or her career. This information can aid the teacher educator in structuring the teacher education program; and, perhaps more importantly, it permits the teacher educator to unambiguously tell pre- or inservice teachers what competencies need be mastered. Moreover, because competencies are grouped on the grid by functions, it should help both teacher educator and learner better understand and relate various teaching tasks and requirements within a teacher training program.

3. For the researcher, the grid permits a careful exposition of teaching tasks. This can be used to organize and administer systematic research on teaching functions. Or, using the grid as a basis for generating hypotheses, the researcher can examine the validity of the tasks identified and the wisdom of their assignment to respective cells on the grid. He also can use the grid for identifying and placing tasks not currently listed.

SUMMARY

Competency-based teacher training requires clear statements of objectives, sequenced according to the needs and interests of learners as well as according to instructional considerations. No satisfactory description of the components of such a system currently exists. In this study we discuss a classification system used to generate teacher-competencies for teachers of varying levels of skill and experience. We also report on the results of a study designed to test the usefulness of the classification system and of the competencies identified through its use. The classification system, its use, and the results obtained from this study should be of interest to educators working with performance-based systems of teacher training or for persons in public schools planning inservice training programs.